

ACSES

Advanced Civil Speed Enforcement System



ACSES OVERVIEW

4&9 Aspect Cab Signal System (CSS)

w/Speed Control System (SCS)

the Foundation for ACSES

i.e. ACSES / CSS+SCS => Full PTC

a vital system achieved incrementally

**Required for High Speed Operation
on the NEC:**

- **NYP-WAS 125 to 150 MPH**
- **NHV-BOS 110 to 150**



BRIEF HISTORY

**July 22, 1998: FRA Final Order of
Particular Applicability Published**

**Result of six year negotiation with FRA
+ 2 years experience with test bed**

Order Required (in addition to CSS+SCS):

**Positive Stop at all Interlocking Signals
+ Enforcement of all Speed Restrictions**

**followed by Radio Delivery of
Temporary Speed Restrictions**



THREE PHASES

ACSES I - Phase 1:

Enforced Permanent Speeds

+ Positive Train Stop at Interlocking Signals

ACSES I - Phase 2:

Positive Train Stop Release via Radio added

ACSES II:

Temporary Speed Restrictions via Radio added



PRESENT STATUS

ACSES I – Phase 1:

[NYP-WAS] County–Ham & Prince-Ragan
49 Route Miles, 98 Track Miles

ACSES I – Phase 2:

[OSB-BOS] Conn-Cove
121 Route Miles, 262 Track Miles

ACSES II:

[NHV-OSB] Mill River-Conn
33 Route Miles, 68 Track Miles

TOTALS: 203 Route Miles, 428 Track Miles



COST

Alstom Contract Closed at :	\$28.5M
System Installation :	\$14.1M

Average per Vehicle Cost	\$50K
Average per Track Mile	*\$47K

****(Inflated – learning curve charges included)***



LESSONS LEARNED

Design of onboard equipment:

Keep as much common as possible

- more than 20 vehicle types equipped
with the same OBC & Card File package**

Specification:

**Keep it as simple as possible, but be certain all
minimum required functionality is included**

Have precise location data to start:

ACSES was more precise than our initial data

Transition Team Is Required



IMPORTANT TO REMEMBER

Revenue Service requires Training & appropriate written Instructions for:

All Operating Personnel -

Operating Rules (NORAC)

Special Instructions (T.T.S.I.)

T & E Personnel -

Air Brake Instructions (AMT-3)

M of E Personnel -

Maintenance Instructions (SM-1065)

+ Periodic Test Procedures (MAP-8)

C & S Personnel -

Maintenance Instructions (Manuals)

Periodic Test Procedures (AMT-27)



IN SUMMARY

203 Route Miles in revenue service in a congested multiple track high speed environment.

**ACSES / CSS+SCS => Full PTC
by FRA / RSAC Definition**

Good Fit for Amtrak's High Speed Service

